CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of San Diego }

On September 3, 2013 (Date) before me, Elizabeth Etienne, Notary Public (Here Insert Name and Title of the Officer)

personally appeared Michael J. Schwaebe (Name(s) of Signer(s))

_____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Elizabeth Etienne (Signature of Notary Public)

ELIZABETH ETIENNE
Commission # 1874407
Notary Public - California
San Diego County
My Comm. Expires Dec 24, 2013

Place Notary Seal and/or Stamp Above

OPTIONAL

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Title or Type of Document: Affidavit of Michael J. Schwaebe

Document Date: September 2, 2013 Number of Pages: 7

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☒ Individual	☐ Individual
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact	☐ Attorney in Fact
☐ Trustee	☐ Trustee
☐ Guardian or Conservator	☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer Is Representing: _____	Signer Is Representing: _____
RIGHT THUMBPRINT OF SIGNER — Top of thumb here	RIGHT THUMBPRINT OF SIGNER — Top of thumb here

document scanned and emailed

AFFIDAVIT OF Michael J. Schwaebe

State of California

San Diego County

I, Michael Schwaebe, attest that my statements are true to the best of my knowledge.

Comment round for FCC ET Docket No. 013-84 and ET Docket No. 03-137

1. My name is Michael Schwaebe. My address is 215 Andrew Ave, Encinitas, CA 92024.

2. I am a Professional Engineer and Building Biology Environmental Consultant.

3. **Request for Exposure Limits That Protect Humans from the Biological Effects of Non-Ionizing Radiation**

In this request I'm going to tell you what I would like to see come of this rule-making. Then I am going to provide examples, in my personal experience and those of my clients, as well as examples in the science supporting my request. I include reviews of some RFR exposure limits globally, along with a reference to a current trend where insurance companies are declining to cover damage from RFR exposure. I've also included a biography so that you know from where these comments are coming, e.g., an engineer that served in USN nuclear submarines and worked at SCE's San Onofre Nuclear Generating Station.

4. What I Would Like to See in the Reassessment of RFR Exposure Limits for the General Public

A. Acknowledge that the current thermal limits, based on a 6 minute RMS average, do not address the biological effects associated with the peak signal of our wireless devices, nor all of the research that shows biological effects as low as one millionth of the current limit.
B. Reduction of the MPE limits to 10 $\mu W/cm^2$, as is already the standard in China, India, Italy and Russia."
C. Locate antennas and set maximum power levels in a way that minimizes effects on health and environment.
D. Establish SAR limits that provide protection from the biological effects for all the possible users, e.g., age and size of head with handset pressed against the ear.
E. Publish an FCC guidance document with a title something like this: "Moderating Personal Exposure (And Biological Health Effects) from Non-Ionizing Radiation Emitted by Wireless Electronic Devices."
F. Publication of a standard that sets limits for RFR emissions from personal wireless devices, e.g. Wi-Fi, WLAN, cordless mouse, keyboard, monitor, cordless telephone, tablets, eReaders and game toys, that provides guidelines to minimize personal exposure to the devices.
G. Establishment of an independent research fund and organization to manage RFR research.

5. Some Personal Notes on How RFR Exposure Affects Me, an Electric Sensitive Human

When standing 4 feet from the new SDG&E Itron smart meter installed on my house, with just one microburst, I would feel a ripping sensation through the back of my head and neck and then a headache that would last for hours. This Itron smart meter had a peak reading of about 0.02 $\mu W/cm^2$ at a distance of 3 feet, as measured with a Gigahertz HF59B HF Analyzer. The meter has been removed and there are no wireless devices in my home now, and I am so much more comfortable. In other peoples' homes with cordless phones, or Wi-Fi/WLAN, I would get an oppressive feeling on the back of my head and shoulders, leading to headache, vision distortion, anxiety, irritability, and ringing in the ears that would continue for hours after I left. Typically these wireless devices have an RFR level of about 1-4 $\mu W/cm^2$ at 2-6 feet from the devices. And I would experience these discomforting symptoms even when I was 20 feet away.

6. Radiofrequency Radiation (RFR) has Neurophysiological Effects that Impact Quality of Life, Stories about My Clients

Lorraine L. is a former Navy dentist, disabled due to chemical sensitivity. After the smart meters were installed in her neighborhood in Coronado, CA, she became electric sensitive. I saw this woman cry because she was exposed to smart meter RFR that was less than 0.02 $\mu W/cm^2$.
Vicki R. developed heart arrhythmia and anxiety after living for approximately 2 years in a nice La Jolla, CA neighborhood surrounded by more than 400 antennas of different types on Soledad Mountain and at UCSD. Her home was approximately midway between the two locations. The safest place for her there was on the floor in the downstairs laundry room. She has taken up residence temporarily at another site, and her health was restored. The radiation levels in the second floor bedroom were as high as 2 $\mu W/cm^2$ peak, about half being from radio and television and the other half being from mobile phone antennas.

Sue B. has been living in her 2 bedroom home in La Mesa, CA and can no longer safely occupy the master bedroom where she had slept for the past 15 years. She experiences headache, tightening of the neck and shoulders, shortening of breath and anxiety. These symptoms came on after a smart meter was placed on the power panel on her bedroom wall. The smart meter was installed about the same time that mobile antennas in her neighborhood were upgraded to 4G. The typical RFR levels outside of her bedroom are 0.2 $\mu W/cm^2$ peak.

Marie T. in La Jolla, CA couldn't sleep well after the smart meter was installed on her power panel 12 feet from her bed, even though the smart meter faced outward. She also had Wi-Fi and cordless phones in her home office, with RFR levels of 1-2 $\mu W/cm^2$ peak where she would sit. After the smart meter was installed she could no longer rest comfortably in her bedroom or in her home. Her health and her good sleep were restored when the smart meter was removed, the computers were hardwired and a corded phone was installed.

Anne S. in San Diego is an environmentally sensitive PhD engineer. When the family home where she had taken refuge was no longer available to her, she couldn't find an apartment or home where the RFR levels were low enough that she could comfortably sleep. Consequently, she slept in the back of her pick-up truck for 5 months, and now lives in a rural area 60 miles inland in Guatay, CA.

Ron and Nicola R., Jeff L. and John T., in Encinitas, CA all had ringing in their ears that seemed to be worse when they went to bed and experienced disturbed sleep. Their doctors could find no medical explanation for the tinnitus. All of them slept with cordless phone base stations on the bed stand, with RFR levels at 2 feet of approximately 2 $\mu W/cm^2$. Their symptoms declined significantly when their cordless phones were removed.

Nicola R., in Encinitas, CA, said that when the Wi-Fi was removed from her office, she no longer had the usual headache and fatigue after working there for 6 hours there. The power density was 2.5 $\mu W/cm^2$ at her chair 3' from the Wi-Fi router.

Piper L. and Sonia G. in Encinitas, CA both said that their headaches and tension went away and they could breathe easier when the Wi-Fi, located 20 feet away, was turned off.

Harrison B. is an English professor at SUNY New Paltz, NY and wears a ball cap lined with RF reflective material. If he gets too close to a Wi-Fi transmitter at the campus, he gets a sharp wedge-like pain in the right temporal area and a blinding headache. This sensitivity has led him to seek a basement classroom and cellphones and computers in the wireless mode are prohibited in his classroom.

Ken M. at the Country Acres mobile home site, in Louisville, TN and several of his tenants have had intermittent cardiac symptoms, such as arrhythmia, low or high blood pressure, and anxiety, irritability, depression, loss of libido and physical vitality that started when the local electrical cooperative installed a SCADA antenna in the middle of the property. The SCADA operates at 2.4 GHz spread frequency, with microbursts at one minute increments. Power density in the homes was approximately 1 $\mu W/cm^2$ peak.

Emily R. in Media, PA went to the hospital with ketoacidosis, complications of diabetes. Emily developed tachycardia. The doctors were stumped, and this continued for several days despite medications. When her mom Judy persuaded the doctors to remove the wireless monitors, the heart rate and blood pressure returned to normal ranges, and Emily was released. All the medical monitors were wireless, the trend in our modern hospitals. That Emily's health was affected by the wireless monitors is consistent with this peer reviewed study: "Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system", Magda Havas et al, Eur.J. Oncol. - Library Vol. 5. See http://electromagnetichealth.org/wp-content/uploads/2010/10/Havas_HRV_Ramazzini1.pdf

The RFR exposure for these clients, and many from my personal experience not noted here affects the quality of their lives. In all of these, the RFR has been less than 1% of the thermal limits.

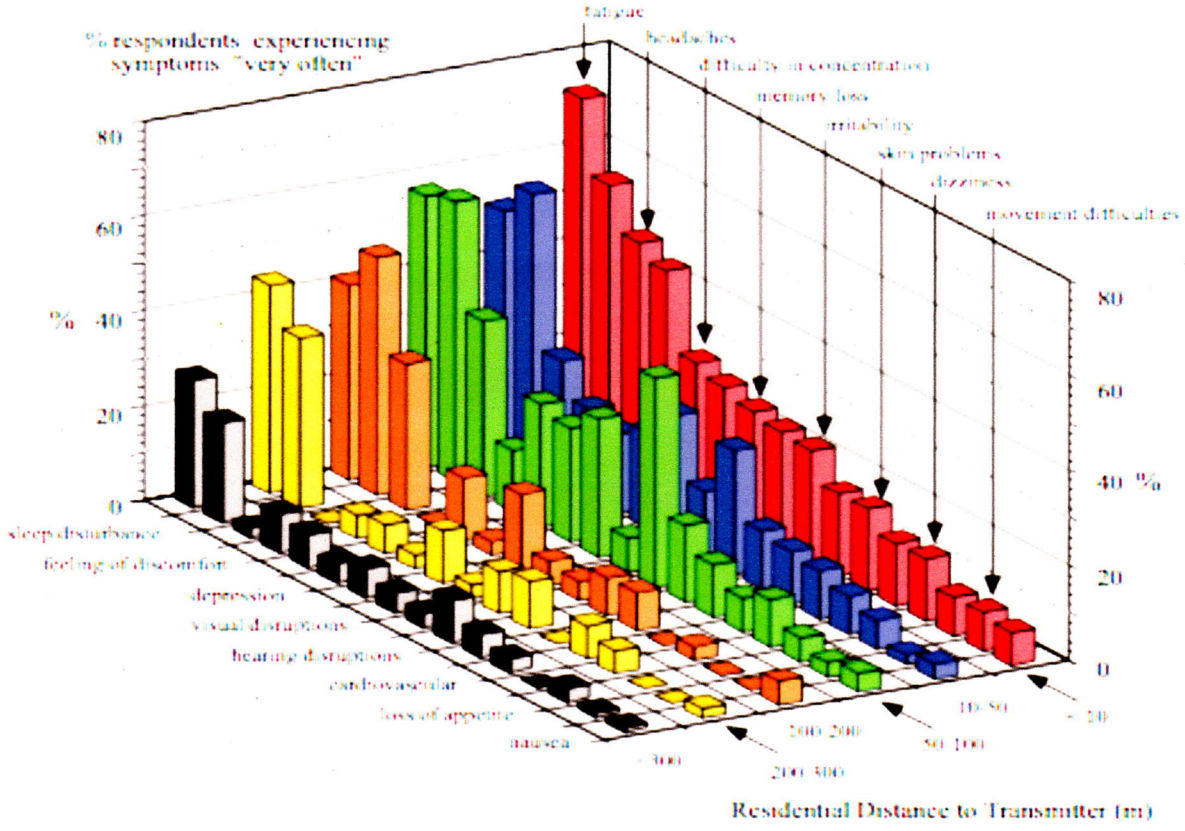
I have observed that the wireless devices that are brought into their homes and offices are often operating at 10-100 times more power than is needed to serve these areas. Often the devices are placed right next to a person, the bed, the desk. There is no guidance provided with the devices, and the host is ignorant about the biological consequences of sitting and sleeping next them.

Many of my clients tell me that they wake up at about 2 a.m. in the morning and can't get back to sleep. Many are on sleep medications. A recent study by the CDC found that 4% of American adults have recently used a prescription sleep medication, (http://www.cdc.gov/nchs/data/databriefs/db127.htm) According to the New York Times; Americans spend $4.5 billion a year on such sleep aids (http://www.nytimes.com/2007/10/23/health/23drug.html?pagewanted=all&_r=0).

7. Epidemiology Study Showing Neurophysiological Effects in Proximity to Mobile Antenna

The epidemiology study by Santini et al, 2002, documented many of these affects associated with proximity to mobile antenna. A chart illustrating this is shown below. It is noteworthy that the study concluded that the health effects become significant at 0.1 $\mu W/cm^2$, 1/100000 of the current RFR limit.

There is human cost for the convenience of wireless devices. For an example, the smart meters using RF communication are undoubtedly the most economical way for the utilities to implement metering technologies. However, there are human costs and health consequences, including an impaired quality of life. And ultimately, the same thing can be said of all of our wireless devices.



Frequency of Electromagnetic Hypersensitivity Symptoms Based on Distance to Cell Phone Base Station (Santini et al, 2002).

8. Some Good References to Biological Effects

RFR at low levels, e.g. less than 1% of the current FCC limit, contributes to inflammatory conditions that lead to a host of inflammatory diseases, including cancer. See "Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays" by B. Blake Levitt and Henry Lai here:
www.nrcresearchpress.com/doi/pdf/10.1139/A10-018.

Biological effects from RFR are well documented in the Bioinitiative Report found at BioInititaive.org. At this website there are RF color charts (http://www.bioinitiative.org/rf-color-charts/) that show the RFR power density, biological effects and a reference citation for the following 8 categories:

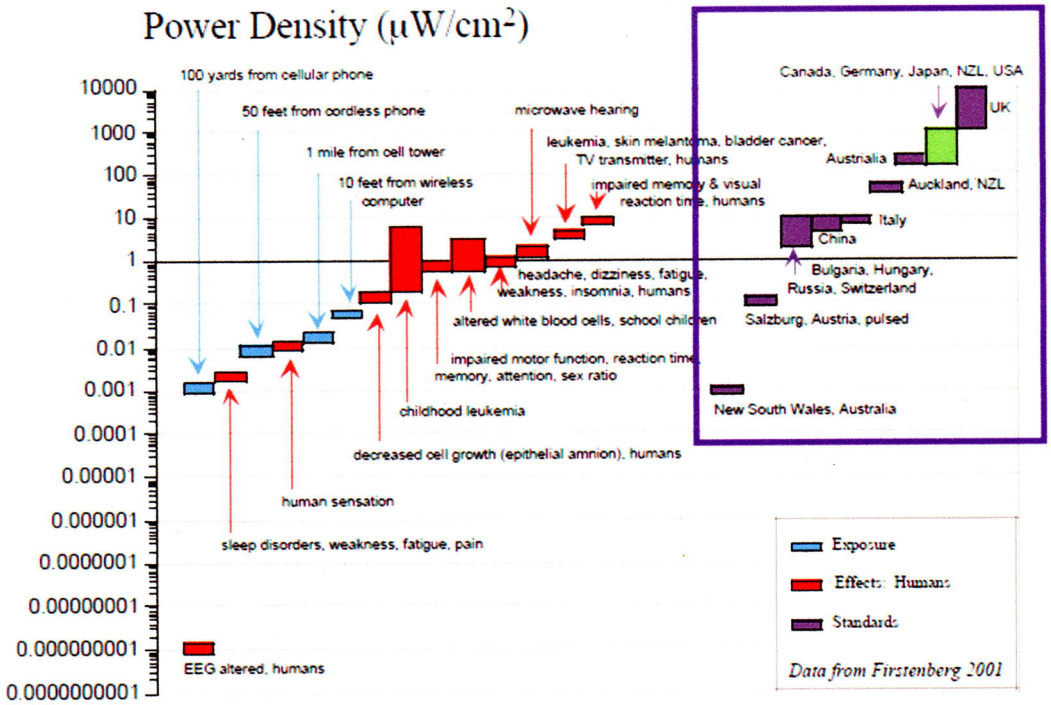
A. Stress proteins, HSP, disrupted immune function
B. Reproductive/fertility effects
C. Oxidative damage/ROS/DNA damage/DNA repair failure
D. Disruptive calcium metabolism
E. Brian tumors and blood-brain barrier
F. Sleep, neuron firing rate, EEG, memory, learning, behavior
G. Cancer (other than brain), cell proliferation
H. Cardiac, heart muscle, blood-pressure, vascular effects

There are 46 citations for RFR levels equal to or less than 10 $\mu W/cm^2$, which is 1% of the FCC exposure limit for a typical mobile phone antenna. Also in these tables are 62 citations for a SAR equal to or less than 1.6 W/Kg, the current FCC limit.

9. RFR Exposure Limits around the World

China, India, Russia, and Italy have a maximum exposure limit of 10 $\mu W/cm^2$, which is 1% of the FCC thermal limit. More than half of the world's population has an exposure that's less than our regulators provide in the United States. These limits are a reflection of the known science and are probably still too high to protect from biological effects that occur at very low levels. Just because we're Americans doesn't mean that we have a thicker skin that protects us from RFR.

This figure is shown on page 5 of Magda Havas' San Francisco Wi-Fi Environmental Report and illustrates guidelines for many countries. http://www.powerwatch.org.uk/pdfs/20061232_havas.pdf



There is a global trend to moderate RFR exposure limits because the science shows that there are serious biological consequences that affect our health. At this website http://www.cellphonetaskforce.org/?page_id=128 there are more than 15 citations of major libraries, schools, organizations and government agencies that have removed Wi-Fi and or recommend that it not be used in schools. In addition, there are more than 10 citations where schools, organizations and government agencies have prohibited or recommended that cell phones not be used in the schools, or used by children.

In India mobile antennas are being removed from schools, colleges, hospitals, near jails and play grounds, apartment rooftops and more as a result of court order. See http://www.google.com/url?sa=t&rct=j&q=israni%20%22union%20of%20india%22%20%22high%20court%22%20rajasthan&source=web&cd=5&ved=0CD4QFjAE&url=http%3A%2F%2Fwww.rtiindia.org%2Fforum%2Fattachments%2Fchit-chat%2F8595d1358495483-no-mobile-towers-near-schools-hospitals-directs-rajasthan-hc-no-mobile-towers-near-schools-hospitals-directs-rajasthan-highcourt.pdf&ei=80MeUq7ONMnkyQGJmYGwDA&usg=AFQjCNFCfNEmAnTRaTYhfxag1UQdZohJkg

The Parliamentary Assembly of the Council of Europe in ERES 1815 has recommended numerous actions for the health of the citizens of the entire European Union (28 countries) as follows: 5 actions to reduce exposure; 4 actions to set preventive thresholds; 2 actions to protect children; 4 actions for community planning to reduce health effects; and 8 actions for risk assessments and precautions. One item of note for the current rule making is item 8.1.5, which states, "...step up research on new types of antenna, mobile phone and DECT-type device, and encourage research to develop telecommunication based on other technologies which are just as efficient but whose effects are less negative on the environment and health…"
http://www.assembly.coe.int/Mainf.asp?link=/Documents/AdoptedText/ta11/ERES1815.htm

10. Insurance Companies Are Taking Note of the Risks

Insurance companies, such as Lloyd's of London, are not insuring for the health effects caused by exposure to RFR (http://www.mainecoalitiontostopsmartmeters.org/wp-content/uploads/2013/04/EV9-Insurability-Liability-Corrected-4-8-13-PUC-464.pdf). Insurance companies, looking at the science, and doing their risk assessments, are looking out for their financial interests. This says something about the gravity of the perceived health consequences from chronic RFR exposure. The precautionary principle can really be applied now to mitigate what is ultimately coming with the current exposure limits, epidemic health challenges.

11. Conclusion

The comments above serve to illustrate, both from personal experience and the science, that RFR non-ionizing radiation has biological effects well below the current thermal limits.

It is time to acknowledge that the current thermal limits do not protect us from the biological effects associated with the radiation emitted by our wireless devices, and to take appropriate precautionary steps. Indeed, Europe and other nations in our world are setting an example for us.

We need to be protected from mobile antennas, telecommunication systems and other RFR sources that come from outside our homes, and we need to be protected from the technologies that we bring into our homes and offices.

12. Biography

A. Education: Graduated from Oregon State University in 1969 with a Bachelor of Science degree in Mechanical Engineering (BSME). I was privileged to have a Navy scholarship for my schooling and upon graduation I was commissioned directly into the US Navy as an Ensign.

B. US Navy ('69-'74): Engineering watch officer supervising maintenance and operation of nuclear propulsion systems. Qualified in submarines, ship's watch officer supervising maintenance and operation of ship.

C. Solar Gas Turbine Corp. ('75-'77): Program administrator for a nationwide emergency gas turbine preventive maintenance project.

D. Planning Research Corp (PRC) ('78-'80): Director of pre-overhaul test, inspection and planning for US Navy non-combatant surface ships.

E. Southern California Edison, San Onofre Nuclear Generating Station (SONGS) ('81-'09) Systems engineer, design maintenance and safe operation. I completed my certification as a Professional Engineer at SONGS in the mid 80's.

F. Building Biology Environmental Consultant:

In 1993 I had a God knock at the power plant, a head injury where forward motion, as I had known it, stopped. A physical and mental condition arose of sensitivity to chemical, electrical, sound and subtle energies. In circa 2000, I undertook the study of Biogeometry, a tool set that empowered me to remediate the powers of nature around me so that I could be more comfortable. About 2006 remediation of the energy qualities associated with electrical was no longer enough for me to be comfortable in my skin. And it was at this time that I embarked in the Building Biology training. I did the three basic courses that year, purchased instruments, and was mentored by Larry Gust, now chairman of the board of directors for the Building Biology Institute and Martine Davis, an indoor air quality specialist. I started the work in my home, in my work place and in the homes of friends. All along, from the start of my training, I have sought out my personal sensitivities and their causes and to measure / quantify these. I was awarded a certificate as a Building Biology Environmental Consultant in mid-2011.

As a Building Biology Environmental Consultant, I bring to the task my personal instrument, honed through years of self-awareness, insight and augmented by a host of instruments. I, for the most part, feel what my clients feel. I can assess the living or work space and know when I enter what is amiss, where it acts in the body for me and for the client, determine the source and remediation.

Michael J. Schwaebe, P.E., BBEC

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September 2, 2013